

Technical Note of Photometer Detector Noise Spectra Calibration Product

----- Version 4.0

(Kevin Xu, NHSC, August 15, 2011)

1. General Description

This product contains the noise power spectrum for each detector channel in the SPIRE photometer arrays, to be used in the mapmaking module *MADmap* of the scan-map pipeline. There are two editions of the calibration product (*SCalPhotChanNoise*) for the two different bias modes (*nominal mode* and *bright source mode*). The noise power spectra are calculated using the detector signal timelines in the calibration observations, after the flux conversion and temperature drift correction.

2. Data Format

There is one table dataset per array (e.g. PSW, PMW, PLW), and one column per detector channel in the table except for the first column which is for the frequency (in Hz). The power spectral density is in the units of $\text{Jy}/\sqrt{\text{Hz}}$.

3. This Delivery (v4)

1. **SCalPhotChanNoise_Nominal_20091118_v4.fits**
 - Photometer, Nominal mode
 - Cal. Observations (staring, dark-field-dithered, 1000s):
 - OD167: 0x500023C2/C3/C5/C6/C7
 - Flux calibration: spire_cal_7_0
 - Slope Removal
 - Smooth fit of real power spectral density
2. **SCalPhotChanNoise_BrightSource_20091118_v4.fits**
 - Photometer, Bright Source mode
 - Cal. Observations (staring, dark-field-dithered, 1000s):
 - OD167: 0x500023E7/E9/EA
 - Flux calibration: spire_cal_7_0
 - Slope Removal
 - Smooth fit of real power spectral density